



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

THE JOURNAL OF POLITICAL ECONOMY

VOLUME 26

July 1918

NUMBER 7

THE WORLD'S COAL SITUATION DURING THE WAR. II

IX. THE UNITED STATES

THE DEVELOPMENT OF GOVERNMENT CONTROL

The effect of the European war on the coal situation in the United States became noticeable more generally during the latter part of the summer of 1916, when a greatly increased demand by war industries for coal, local coal shortage, traffic congestion, and panic prices focused public attention upon the abnormal conditions which had developed in the coal trade. The gradual dislocation of the nation's industrial life reflected itself first in the anthracite trade and was followed by similar developments, only on a much larger scale, in the bituminous-coal industry.

Fully a half-year before the coal situation reached a crisis widespread public dissatisfaction had been occasioned by price increases made by anthracite operators in the beginning of the year 1916. These price increases were attributed by the operators in part to increased cost of supplies, deeper mining, and the Pennsylvania workmen's compensation act and tonnage tax, but principally to a wage increase under the new wage agreement of May 5, 1916, which provided for an increase of about 7 per cent over the 1912 rate. The view current among the public, that the increases in the

price of anthracite coal were unwarranted, was voiced by a resolution of the United States Senate, the so-called Hitchcock Resolution of June 22, 1916. In that resolution the Federal Trade Commission was requested "to investigate and report on the recent increase in the price of anthracite coal and on the relation between the cost of labor and the price of anthracite coal prior to said increase and at the present time." In pursuance to this resolution the Federal Trade Commission during the fall and winter of 1916-17 made an investigation of the production, distribution, and prices of anthracite coal in the principal producing and consuming centers.

On April 30, 1917, the United States Senate adopted a further resolution calling upon the Federal Trade Commission to report at the earliest possible moment all information relative to the anthracite-coal industry, including the production and cost of mining anthracite coal and the disposition of the anthracite-coal supply during 1916 and 1917 as compared with previous years. After investigation the Federal Trade Commission reported to Congress on June 20, 1917, that the panic prices which had prevailed in the fall and winter of 1916-17 were caused chiefly by local coal shortages in consuming markets, with resulting buying panics. It was shown that the actual market shortage for the entire coal year 1915-16 was in fact 4 per cent greater than the average anthracite supply marketed for the three preceding years. Congestion of railroad traffic, frequent embargoes, and a shifting of markets resulting from the Erie Railroad diverting to the West a large tonnage normally sold in the East had seriously interfered with the distribution of coal and had contributed to bring about conditions from which a panic demand developed.

Regarding the price of anthracite at the mines, the Commission found that while the so-called railroad coal companies had slightly increased their basic circular prices during the crisis, many independent operators had taken advantage of market conditions to charge exorbitant profits, price increases ranging from \$1.00 to \$3.00 and even \$5.00 a ton. The speculative transactions of jobbers formed the most striking feature of the panic market. The majority had averaged double or treble their normal gross margins of profit, and some five or six times their normal margin.

With respect to the retail coal market, conditions differed. Generally speaking a number of dealers in Chicago, Massachusetts, and Rhode Island had increased their gross margins by as much as \$1.50 or \$1.75 per net ton over their normal margin. Others in New York City, Detroit, and Boston took less marked advantage of the crisis, and still others in Minneapolis, St. Paul, Milwaukee, and Buffalo did not unduly raise their prices.

The Commission further found that in the case of the coal-operating companies whose books had been audited the increase in prices was not justified by the increase in cost.

In the bituminous-coal industry developments have been somewhat different. In a paper read at the sixth annual meeting of the International Railway Fuel Association at Chicago in May, 1914, Mr. C. G. Hall in discussing the conditions prevailing at that time said:

The deplorable condition of the bituminous-coal industry has been emphasized by the coal operators in all conventions and meetings in which they have participated during the past eighteen months. Remedies have been proposed, discussed, and abandoned as impracticable or unlawful. It has even been proposed in conventions of national scope that Congress be petitioned for an appropriation to put the bituminous-coal industry on its feet financially. The physical producing capacity of the bituminous mines of this country is far in excess of the amount of coal consumed.

Conditions like those described in the foregoing prompted the House of Representatives to pass the so-called Rainey Resolution on August 18, 1916.¹ This resolution, after calling attention to alleged unfair methods of competition, the unsound financial condition, wasteful mining methods, and unsatisfactory labor situation, directed the Federal Trade Commission to investigate the bituminous-coal industry immediately. On May 19, 1917, the Federal Trade Commission reported² to the House of Representatives that in its opinion the coal industry was being paralyzed by the failure of transportation, which curtailed production and gave rise to a wildly fluctuating market in which speculation fed upon panic. The Commission recommended in substance (1) that the

¹ H. R. 352, Sixty-fourth Congress, First Session.

² *Report of the Federal Trade Commission on Anthracite and Bituminous Coal*, 1917, p. 18.

production and distribution of coal and coke be conducted through a pool in the hands of a government agency; that the producers of various grades of fuel be paid their full cost of production plus a uniform profit per ton; (2) that the transportation agencies of the United States, both rail and water, be similarly pooled and operated on government account under the direction of the president and that all such means of transportation be operated as a unit.

But during the course of the investigation the bituminous-coal situation changed completely, and conditions developed in the anthracite industry very similar to those outlined above. Prices had reached unprecedented levels; traffic congestion, demurrage abuses, numerous embargoes, and priority-shipment orders made the situation worse. Complaints increased that agreements to deliver coal at contract prices were broken, many shippers selling their coal in the open market for as much as the market would stand.

In the anthracite trade conditions were at this time somewhat better, due to the fact that the Federal Trade Commission was exercising a certain degree of supervision over prices by publishing bulletins from time to time on anthracite-coal prices at the mines, gross margins of retailers, and anthracite market conditions generally.¹ By publicity of this kind and with the aid of sheer force of public opinion, which was becoming thoroughly aroused, anthracite prices on the whole remained stabilized.

In order to stabilize bituminous-coal prices, which were running wild, Mr. F. S. Peabody, who, in April, 1917, was appointed chairman of the Committee on Coal Production of the Council of National Defense, called a conference of bituminous-coal operators east of the Mississippi to meet at Washington on June 28, 1917. At this conference, which was attended by from 350 to 400 coal operators, also Secretary of the Interior Lane, and Commissioner Fort of the Federal Trade Commission, a voluntary agreement was made to abide by certain maximum prices for coal sold at the mines. The prices agreed upon were to become effective July 1, 1917. The maximum jobber's commission was fixed at 25 cents per net ton.

¹ See *Interim Report of the Federal Trade Commission to the Senate of the United States on Anthracite Prices*, May 4, 1917.

While the prices agreed upon at this conference, the so-called "Peabody-Lane prices," represented substantial reductions as compared with the range of prices quoted in the open market at that time, public opinion generally seemed to take the view that they were too high. Besides, complaints soon began to increase that many operators failed to abide by the agreement, and the Committee on Coal Production began to make public lists of such violators. Finally, Secretary of War Baker, of the Council of National Defense, issued a statement disapproving of these prices,¹ and the agreement was presently disregarded altogether.

In the meantime Congress had taken the national coal situation under consideration² and passed the so-called Lever Act ("An Act to provide further for the national security and defense by encouraging the production, conserving the supply, and controlling the distribution of food products and fuel"), which was approved on August 10, 1917.³ The act provided in substance as follows:

The President of the United States shall be empowered, whenever in his judgment necessary for the efficient prosecution of the war, to fix the price of coal and coke, wherever and whenever sold, either by producer or dealer, to establish rules for the regulation of and to regulate the method of production, sale, shipment, distribution, apportionment, or storage thereof among dealers and consumers, domestic or foreign; said authority may be exercised by him in each case through the agency of the Federal Trade Commission during the war or for such part of said time as in his judgment may be necessary.

In case a producer or dealer fails to conform to such prices or regulations or to conduct his business efficiently under the regulations or in a manner prejudicial to the public interest, the President is authorized to requisition the plant and business and operate the same through such agency as he may direct, the owner being paid a just compensation. If in the opinion of the President it shall be necessary, he is authorized to require coal producers to sell their products only to the United States through an agency to be

¹ Hearings before the Subcommittee of the Committee on Manufactures, United States Senate, p. 450.

² Hearings before the Committee on Interstate Commerce, United States Senate, Sixty-fifth Congress, First Session, June 22-26, 1917, Parts I and II.

³ Public Act No. 41, Sixty-fifth Congress.

designated by him, such agency to regulate the methods of production, shipment, distribution, apportionment, or storage among dealers and consumers, and to make payment of the purchase price to the producers. The Federal Trade Commission was instructed to determine the reasonableness of profits and cost of production necessary to establish the purchase price.

With regard to the fixing of maximum prices for coal and coke section 25 provides that the Federal Trade Commission is to make inquiry into the cost of production and shall have access at all times to the books and records of all mine operators or other persons where coal and coke may become subject to this section. The Commission shall fix and publish maximum prices for both producers and dealers, allowing the cost of production, including the expense of operation, maintenance, depreciation, and depletion, and adding thereto a just and reasonable profit. The maximum prices so fixed shall not be construed as invalidating any contract in which prices are fixed, made in good faith, prior to the establishment of maximum prices.

A penalty clause provides for a fine not to exceed \$5,000, or imprisonment for not more than two years, or both, in case of conviction for violation of this law.

The passage of the Lever law by Congress marked an important turning-point in the coal situation of the United States. With the enactment of that law federal regulation of the coal industry for the period of the war was initiated, and on August 23, 1917, the President appointed Harry A. Garfield, president of Williams College, United States Fuel Administrator. Dr. Garfield immediately organized the United States Fuel Administration, with headquarters at Washington, D.C., and appointed state fuel administrators for the different states. On May 3, 1918, Mr. Cyrus Garnsey, Jr., was appointed Assistant United States Fuel Administrator. The main divisions of the United States Fuel Administration are the following: Administrative, Conservation, Distribution, Legal, Oil, Education, and State Organization.¹

¹ The Federal Trade Commission has performed certain work relating to the coal industry in co-operation with the United States Fuel Administration.

PRODUCTION

The most encouraging feature of the war-time coal situation in the United States is the fact that the production of coal, both anthracite and bituminous, has steadily increased since 1914. In all the other leading coal-producing countries of the world the production of coal has declined during the war. Notwithstanding the fact that the producing capacity of the coal mines has been seriously interfered with by labor shortage, increased costs, and scarcity of supplies, and above all by the breakdown in the transportation facilities of the railroads, the total output of the country's coal mines has increased as follows:

Year	Anthracite	Bituminous	Total
1913.....	91,524,922	478,435,297	569,960,219
1914.....	90,821,507	422,703,970	513,525,477
1915.....	88,995,061	442,624,426	531,619,487
1916.....	75,461,527	502,518,545	577,980,072
1917.....	86,389,101	544,261,581	630,650,682

It is of note that the increase is in the production of bituminous coal, the production of anthracite having decreased.

The production in tons of bituminous and anthracite coal during the first four months of 1918, as compared with the first four months of 1917, was as follows:

Months	Anthracite		Bituminous	
	1918	1917	1918	1917
January.....	5,638,383		42,727,000	
February.....	5,812,082		43,557,000	
March.....	7,276,777		48,188,000	
April.....	6,363,375		46,949,000	
Total.....	25,095,615	23,700,531	181,421,000 *	176,582,648

* Estimated.

The increased demand for coal and the accompanying high prices have resulted in a large increase in the number of coal operations. According to the United States Geological Survey there

were 19,107 coal operations in the United States in 1915, of which 3,762 produced 3,000 tons or more each per year, 511 produced from 500 to 3,000 tons each, and 14,834 produced less than 500 tons each. During 1916 and 1917 many new mines have been opened, old and abandoned mines have again been put into operation, while hundreds of stripping operations and wagon mines (that is, mines which have no railroad connection, the coal being hauled by wagon from the mine to the nearest railroad shipping point) have been opened. Data compiled from the *Coal Trade Journal* show that from April, 1917, to April, 1918, 490 new coal-mining concerns were incorporated in the United States with a total capital of \$53,086,500.

The question of whether or not the indiscriminate opening up of new coal mines should be allowed has been widely discussed both in this country and abroad. In several European countries restrictive legislation has been enacted restricting new development work in coal mines, in order to avoid waste of labor and to increase the producing capacity of present operations. In this country there has been much complaint to the effect that the numerous small wagon mines with inadequate loading facilities detain coal cars for long periods and materially increase the car shortage at the large and efficiently operated mines. A statement of the United States Fuel Administration of May 23, 1918, relative to the opening of new coal mines announces that no new coal mines are to be opened in the future until the Fuel Administration has approved an application which must be made by the prospective operator, and until the Railroad Administration has recommended such application.

Since the coal shortage in the winter of 1916-17 efforts have been made to increase the production of coal. By liberal wage-increase allowances to miners and fair margins of profits to coal operators the production of coal has been stimulated and increased in a measure which greatly exceeds the results of similar efforts in other coal-producing countries of the world. In the early part of 1918 the work of stimulating the production of anthracite, of cataloguing the requirements of the government and the public, and of apportioning the supply among the various states and the amount thereof to be furnished by the several producers was placed in the

hands of a special Anthracite Committee by the United States Fuel Administration. This committee, which is subject to the direction of the United States Fuel Administrator, is also to advise the Director General of Railroads as to the routing and distribution of the coal from the time it leaves the mines until delivered in the various states and communities.¹

While the efforts to speed up and to increase the production of coal have been very successful, they have at the same time resulted in large quantities of poorly prepared coal being shipped from the mines. Widespread complaints developed on account of the large percentage of slate, shale, and dirt contained in the coal shipped to market. To prevent the shipment of dirty coal the United States Fuel Administration by an order of March 18, 1918, allowed a bonus of 20 cents per ton extra for coal prepared or washed according to prescribed regulations. Another order, effective June 1, 1918, prohibits the sale, shipment, or distribution of coal which on account of its content of impurities would not have been considered merchantable prior to January 1, 1916. In case of violation, 50 cents per ton from the government price may be deducted if the coal has been loaded into cars or bins. Inspectors appointed by district representatives of the Fuel Administration are to enforce the order.

The production of coke has increased from 34,555,914 net tons in 1914 to approximately 56,600,000 tons in 1917. Maximum prices for coke were fixed by the United States Fuel Administrator on November 9, 1917, with subsequent revisions. One of the most significant features in the industrial history of the United States is the remarkable growth of the by-product coke industry in the past four years. With the advent of the war this country began to realize the economic necessity of making itself independent of foreign countries for its supply of coal-tar products; entirely new industries were created, and a solid foundation was laid for a large and promising expansion and utilization of our coal resources in the future.

The great demand for fuel material of all kinds has also served as a strong stimulus to increase the production of fuel briquettes.

¹ Anthracite Committee, *Circular No. 1*, March 12, 1918.

In 1916 the output of fuel briquettes in the United States amounted to 295,155 net tons; in 1917 to 406,856 net tons, or an increase of 38 per cent.

TRANSPORTATION

The question of transportation and car supply at the mines has been perhaps the most difficult war-time problem with which the coal industry has had to cope, and nowhere does this problem involve such enormous difficulties as in the United States. Traffic congestion caused by the extraordinary demands made upon the railroads by war industries, troop movements, etc., has time and again paralyzed the transportation of coal from the mines to the consuming markets. Conditions have been most serious at important railroad gateways and terminals like Cincinnati, Chicago, and New York. The great movement of freight to the Atlantic seaboard with insufficient vessels to remove the freight—docks and warehouses being filled and railroad cars left standing in the yards and on sidetracks—finally brought on such an acute state of affairs during the winter of 1917-18 that the United States Fuel Administrator issued his famous "closing" order, on January 17, 1918, providing for five fuelless days from January 18 to 22 and on every Monday, beginning January 28, 1918, and continuing up to and including March 25, 1918.

The slow movement of coal cars in transit and delays in returning empty cars to the mines, due in part to the general congestion of traffic prevailing throughout the country, brought on what is generally considered the most serious phase of the coal situation, viz., car shortage at the mines. This one factor has done more than all other causes combined to keep down coal production. In most of the coal fields of the country coal mines have been forced to close down for shorter or longer periods, while others have been running on short time, in both cases involving a decreased production.¹ This state of affairs began to develop in the fall of 1916 and has continued to become more serious since then.

¹ According to data compiled by the Southern Ohio Coal Exchange (see Hearings before the Subcommittee of the Committee on Manufactures, United States Senate, Sixty-fifth Congress, Second Session, January 9, 1918, p. 367), the full-time output lost from October 29 to December 22, 1917, on account of car shortage by coal operators who are members of that association amounted to 562,889 net tons out of a full-time capacity of 1,608,942 net tons.

A statement given out by the National Coal Association¹ gives the following figures to show the loss in production of bituminous coal on account of car shortage for the period from January 1 to March 1, 1918, the figures being based on official returns of the United States Geological Survey up to February 9, and upon conservative estimates for the remainder of February.

Week Ending	Lost Tonnage
January 5.....	2,321,540
“ 12.....	3,874,818
“ 19.....	5,449,695
“ 26.....	4,064,448
February 2.....	4,569,366
“ 9.....	4,348,986
“ 16.....	3,500,000
“ 23.....	2,000,000
Four days to March 1.....	1,000,000
Total.....	31,128,000

Vice-president F. S. Landstreet of the Consolidation Coal Company, the second largest coal-producing company in the United States, mining on an average 14,000,000 tons of bituminous coal annually, recently made the following statement² regarding coal-car shortage:

Our records show that for the last six months there has been approximately only 60 per cent of railroad cars furnished that the miners employed were capable of loading. It further shows that an average of 6,500 miners has been idle during that period. While the same men were not idle continuously during that period there was an average of that many idle every day.

As this company produces a little over $2\frac{1}{2}$ per cent of the entire production, and as the conditions shown by this company are typical of the conditions prevailing in the entire bituminous region, it is easy to see that there has been at least an average of 100,000 miners idle every day for six months.³

¹ *The Daily Digest of the National Coal Association*, February 28, 1918.

² *Coal Mining Review*, February 1, 1918, p. 12.

³ According to returns received in answer to a questionnaire sent by John L. Lewis of the United Mine Workers of America to 2,700 local unions, seeking information relative to all idle days due to car shortage from December, 1916, to November 1, 1917, the idle days during that period caused a reduction of 50,000,000 tons production (*Coal Trade Bulletin*, January 1918, p. 22).

THE PROBLEM OF DISTRIBUTION

In addition to keeping down the production at the mines the inadequacy of railway facilities has seriously interfered with the distribution of coal from the coal fields to the consuming markets. This was the case particularly with New England and the North Central states which get their coal supply from the coal docks along Lakes Superior and Michigan.

During the season of 1916 the coal shipments from the lower lake ports, Buffalo, Erie, Cleveland, etc., to the docks of the head of the Great Lakes, Superior, Duluth, Milwaukee, Chicago, etc., fell off, while the demand for coal for industrial purposes greatly increased. Formerly at the beginning of each coal season a considerable stock of coal remained on hand at the docks from the previous year. But at the opening of the lake season in 1917 these stocks had been practically depleted and prospects of an imminent coal shortage for the following winter had to be reckoned with. To avert such a calamity Judge Lovett, at that time United States Director of Priority Shipments, issued Priority Order No. 1 on August 23, which gave priority to bituminous-coal shipments from the lower lake ports to the lake docks in the Northwest.¹ As a result of this order the lake coal shipments which passed through the Soo canals (American and Canadian) during the season of 1917 showed an increase of 13.6 per cent over the previous year. The following table shows the shipments in tons of anthracite and bituminous coal through the Soo canals during the years 1916 and 1917.

	1916	1917
Anthracite	2,210,219	2,562,199
Bituminous	13,912,900	15,736,654
Total	16,123,119	18,298,853

In the Eastern states a greatly increased demand for war industrial purposes and a heavy increase in the population of manufacturing centers brought on more or less acute coal shortages during the winters of 1916-17 and 1917-18. According to a report by the Provost Marshall General to the Secretary of War in connection with the selective-service act of 1917, the population of the eastern

¹ *The Coal Dealer*, February, 1918, p. 50.

industrial region, comprising the states of New York, Pennsylvania, New Jersey, Maryland, District of Columbia, Delaware, Massachusetts, and New Hampshire, increased during the past seven years by approximately five millions, or 15 per cent. The greatest shortage of anthracite for household consumption was experienced in New England. Formerly that section got the bulk of its coal supply by water, but the taking over of a large number of vessels by the government for war purposes greatly reduced the facilities for coastwise coal shipments. On October 27, 1917, the United States Fuel Administrator authorized the fuel administrator of New England to obtain and supply coal in limited quantities to meet cases of immediate and pressing exigency and to authorize special sales at wholesale to insure continued operation of public utilities, essential industrial plants, and for other purposes. In January, 1918, the coal shortage in New England assumed such an alarming aspect that on January 3 the United States Fuel Administrator issued a general priority order to certain coal mines directing them to consign a certain number of cars of coal per day to the fuel administrator of New England who was to direct the resale and distribution of the same.

Table I indicates the distribution of anthracite coal during the year of 1916-17 by states grouped in sections, as well as the allotments for railroad supply, shipments to Canada, miscellaneous exports, and allotments for army and navy camps and cantonments, as published by the Anthracite Committee of the United States Fuel Administration.¹ The table also shows the proposed allotment of anthracite for the year 1918-19 and the present increase and decrease for the two years.

It is significant to note that the distribution to New England and the Atlantic states will be materially increased, while the supply to other sections of the country will be curtailed by 2,202,288 tons. The trans-Mississippi states Missouri, Kansas, Nebraska, and Iowa will not receive any anthracite coal.

The plan outlined in Table I constitutes the first systematic effort to regulate the distribution of anthracite coal in the anthracite-consuming territory. The fact that with the exception

¹ *The Daily Digest of the National Coal Association*, May 29, 1918, p. 6.

of a very small tonnage of anthracite coal received in Arkansas and in New Mexico all of our anthracite-coal supply comes from a very limited area, comprising 550 square miles in eight counties of northeastern Pennsylvania, makes the distribution of anthracite a comparatively simple problem as compared with the distribution of bituminous coal. The thousands of bituminous-coal mines spread out over twenty-six coal-producing states, with well-defined markets for certain kinds of coal and long-established channels of distribution involving much cross-hauling and long-distance

TABLE I

	1916-17 Distribution	1918-19 Allotment	Percentage of Increase	Percentage of Decrease
New England.....	9,833,379	10,331,000	16.95	.....
Atlantic states.....	27,878,233	31,417,154	12.69	.....
Central states.....	5,100,024	3,481,945	.....	31.73
Northwest.....	2,710,188	2,380,000	.....	12.18
Trans-Mississippi.....	627,965	.....	.....	100.00
Twenty-four states.....	137,966	.....	.....	100.00
Railroad supply.....	2,481,754	2,481,754	.....	.....
Canada.....	3,856,021	3,602,000	.....	6.59
Miscellaneous exports.....	51,930	51,930	.....	.....
Army and navy camps and cantonments.....	.....	600,000	.....	.....
Total.....	51,677,460	54,345,783	5.16	.....

shipments, combined to make government regulation of bituminous-coal distribution a very complex problem, beset with added difficulties on account of the dislocation of industries resulting from the war.

The first efforts to regulate the distribution of bituminous coal were made by the Committee on Coal Production of the Council of National Defense. In June, 1917, that committee was instrumental in organizing the Lake Erie Bituminous Coal Exchange at Cleveland, Ohio. This exchange is composed of shippers and consignors of coal which is to be transported via rail to Lake Erie ports for transshipment via vessels. The working regulations of this exchange provide that all bituminous coal for transshipment from Lake Erie ports, subject to the exchange, shall be consigned to the exchange and shall be graded as to kinds and classified as to

designated consigning pools under the direction of its executive committee. A statement issued by the exchange states that the proposed pooling plan contemplates (a) the reduction of grades and classifications of coal to a minimum, the classifications in 1916 having reached as high a number as 118 at one port; (b) the reduction of the number of boats detained at lake ports awaiting the accumulation of cargoes by individual shippers; (c) material reduction in switching services incident to the handling of coal on the basis of numerous classifications; (d) reduction in the demand on storage yards of lake cargo coal-carrying lines, these lines having held at lake ports during that part of the year 1916 when lake navigation was in full operation more than 20,000 cars daily; (e) an increased available boat tonnage by eliminating the attraction to return light from Lake Erie ports to Lake Superior ports. It was hoped to reduce, under the plan devised, the number of consignments of coal shipped to Lake Erie ports for reshipment by lake from 677 in 1916 to 97 in 1917. In 1918 the name of this pool was changed to Ore and Coal Exchange.¹

THE ZONE SYSTEM

The experience during the year 1916-17, when numerous coal shortages had developed in different sections of the country, relieved only partly by priority-shipment orders, made it clear that unless radical changes were effected with respect to the distribution of bituminous coal the most serious consequences would be likely to result in the immediate future. Accordingly the United States

¹ Other coal shippers' pools formed along similar lines are the Columbus Coal Shippers' Terminal Pool Association and the Liberty Fuel Exchange, which combines the coal shippers along the three principal railroad lines through Cincinnati. On the Atlantic Coast the Tidewater Coal Exchange serves a similar purpose. It was formed through the efforts of the Committee on Coal Production of the Council of National Defense and was formally approved by the United States Fuel Administrator on November 6, 1917, by an order requiring all transshippers of coal at New York, Philadelphia, Baltimore, and Hampton Roads to make shipments through this exchange. In a statement attached to the order it was said that the order would result in all shipments through these ports being handled through the medium of the exchange, and it was estimated that this would greatly decrease the detention of coal cars at the ports, increase the car supply at the mines, and at the same time make available at all times sufficient coal for emergency purposes for the army and navy requirements.

Fuel Administration, after prolonged conferences with coal producers, jobbers, and consumers, and with traffic and operating officials of the railroads, devised a zone system for the distribution of bituminous coal for the year beginning April 1, 1918. By an order of the United States Fuel Administrator, dated March 27, 1918 the states, with the exception of the Rocky Mountain and Pacific Coast states, were divided into fifty-seven zones, each of which is restricted to the use of coal from certain producing districts. The Rocky Mountain and Pacific Coast states under the zone system will be dependent for their bituminous coal, except for special purposes, on coal mined in Montana, Wyoming, Colorado, New Mexico, Utah, Washington, and Oregon. The whole zoning plan applies only to bituminous and cannel coals and not to anthracite coal or coke. In order to provide for consumers who require illuminating or producing gas, by-product coking, metallurgical smithing, or other particular purposes, or require special coals which are not produced in the coal districts from which the zoning plan permits shipments to be made, special permits covering such cases are issued. The zone system affects all bituminous coal except (1) coal for railroad fuel, for which special arrangements are made, (2) coal for movements on inland waterways, which is in no way restricted by the system, (3) coal delivered to Canada, which is subject to regulations of the Fuel Administration.

The purpose of the plan is to save transportation by the elimination of unnecessary long hauls and avoidable cross-hauls, thereby conserving the car supply and increasing car utility and the production of coal. The method of enforcement of the zoning system is simple. The United States Fuel Administration prohibits distribution beyond the limits of the zone, and the Railroad Administration supplements these prohibitions by railroad embargoes.

A statement issued by the United States Fuel Administration in connection with the zone order states that the general effects of the zone system is to restrict eastern coal to eastern markets and to fill the shortage in the Central and Western states with nearby coal produced in those states. In addition to the saving in transportation the system will provide for the possible retention of something like 5,000,000 tons of coal for the Eastern states which heretofore has gone West by rail. It will eliminate the movement of more

than 2,000,000 tons of Pocahontas coal to Chicago and other western points over a haul of about 660 miles. Chicago is to obtain this tonnage from southern Illinois mines with an average haul of 312 miles. On shipments of 550,000 tons annually from Kanawha districts to Wisconsin points it is planned to save about 2,500,000 car miles; on the movement from southeastern Kentucky to

TABLE II
ESTIMATED CONSUMPTION IN NET TONS OF BITUMINOUS COAL IN THE
UNITED STATES IN 1917 AND REQUIREMENTS FOR 1918-19

	1917 Amount	1918-19 Amount	Percentage of Increase 1918-19 over 1917
Industrial.....	204,907,000	242,024,000	18
Domestic.....	66,915,000	75,678,000	13
Gas and electric utilities.....	33,038,000	37,941,000	15
Railroads.....	155,000,000	166,000,000	7
Exports.....	24,000,000	24,000,000	0
Beehive coke.....	52,450,000	52,450,000	0
Bunker-foreign.....	7,700,000	10,000,000	30
Bunker-domestic, including Great Lakes.....	5,000,000	5,000,000	0
Used at coal mines for steam and heat	11,000,000	12,500,000	14
Total.....	560,010,000	625,594,000	12
Used from storage.....4,375,000			
Exports.....907,000	5,282,000		
Estimated production.....	554,728,000		
Substitution of coal for oil, mainly in west.....		2,000,000	
To increase stocks of industrial plants and public utilities outside of New England by ten days' supply.....		7,000,000	
Total requirements for 1918 with- out allowance for estimated conservation.....		634,594,000	
Production 1917.....		554,728,000	
Increase required.....		79,866,000	14.4

Chicago the saving is estimated at about 800,000 car miles, and the elimination of the Indiana to Iowa movement will save 1,600,000 car miles. The movement of approximately 300,000,000 tons of bituminous coal, or 60 per cent of the total production, will be regulated by the zone system.

Table II, compiled by the United States Fuel Administration, shows the estimated consumption of bituminous coal during the

coal year 1917 and the estimated requirements for the present coal year.

COAL PRICES AND PRICE FIXING

The inflated and speculative prices which obtained in the coal market during the spring and early summer of 1917, and which the maximum prices voluntarily agreed upon by the Committee on Coal Production of the Council of National Defense and bituminous coal operators at the meeting held in Washington on June 28, 1917, failed to stabilize, resulted in a nation-wide call for remedial action by the federal government. In response to this popular demand for effective price regulation President Wilson on August 21, 1917, before a United States Fuel Administrator had been appointed, fixed maximum mine prices for bituminous coal for twenty-two states, and on August 23 for anthracite coal. These prices were subsequently added to and revised at different times by the United States Fuel Administrator. Up to April 1, 1918, the number of additions and revisions amounted to 209, covering special prices for individual mines, changes in state prices, and prices for special coal fields or districts, like the Blue Gem district in Kentucky, the New River field in West Virginia, etc.

BITUMINOUS PRICES

Table III indicates the average prices of bituminous coal at the mines in 1915, the maximum prices agreed upon at the Washington meeting June 28, 1917 (so-called "Peabody-Lane" prices), the President's prices, and a selected list of the maximum prices fixed by the United States Fuel Administrator as in effect on April 1, 1918. To the maximum prices fixed by the United States Fuel Administrator should be added an allowance of 45 cents per ton for wage increase, granted under an order of October 27, 1917,¹ and an extra maximum allowance of 20 cents per ton to cover preparation or washing, authorized by an order of March 18, 1918. It is to be noted also that on May 25, 1918, a reduction was ordered amounting to 10 cents per short ton.

Table IV, prepared by the Director General of Railroads, illustrates the steady increase in the cost of railroad coal since 1915.

¹ See discussion in the section on labor condition, below, p. 698.

As the railroads consume about one-third of the country's coal supply and as most of the coal consumed by the railroads is sold at contract prices, these figures are of special interest.

TABLE III

	AVERAGE PRICE OF COAL AT THE MINES ACCORD- ING TO UNITED STATES GEOLOG- ICAL SURVEY, 1915	"PEABODY- LANE" PRICES JULY 1, 1917		MAXIMUM PRICES FIXED BY THE PRESIDENT AUGUST 21, 1917			MAXIMUM PRICES FIXED BY THE UNITED STATES FUEL ADMIN- ISTRATOR, EFFECTIVE APRIL 1, 1918		
		Run of Mine	Preferred Sizes	Run of Mine	Preferred Sizes	Slack or Screen- ings	Run of Mine	Preferred Sizes	Slack or Screen- ings
Alabama.....	\$1.28	\$4.00	.....	\$1.90	\$2.15	\$1.65	\$2.15	\$2.45	\$1.85
		3.50	.....	2.15	2.40	1.90	2.85	3.10	2.45
		3.00	.....	2.40	2.65	2.15			
Arkansas.....	1.79	.....	.....	2.65	2.90	2.40	3.70	4.60	2.40
							4.35	5.15	2.60
Colorado.....	1.59	.....	.....	2.45	2.70	2.20	2.25	3.50	1.25
							2.35	3.25	1.65
Illinois.....	1.10	2.75	\$3.50	1.95	2.20	1.70	2.65	2.90	2.40
				2.40	2.65	2.15	2.00	2.20	1.70
Indiana.....	1.10	2.75	3.50	1.95	2.20	1.70	2.00	2.20	1.70
							2.95	3.25	1.70
Iowa.....	1.78	.....	.....	2.70	2.95	2.45	2.70	2.95	2.45
							2.75	3.10	2.00
Kansas.....	1.66	.....	.....	2.55	2.80	2.30	2.70	2.95	2.45
Kentucky.....	1.01	3.00	3.50	1.95	2.20	1.70	2.65	2.90	2.40
				2.40	2.65	2.15	2.30	2.55	2.05
Maryland.....	1.28	3.00	3.50	2.00	2.25	1.75	2.40	2.65	2.15
Missouri.....	1.73	.....	.....	2.70	2.95	2.45	2.70	2.95	2.45
							3.15	3.40	2.45
Montana.....	1.62	.....	.....	2.70	2.95	2.45	2.70	3.60	1.00
New Mexico.....	1.44	.....	.....	2.40	2.65	2.15	4.25	5.05	3.55
							3.05	4.05	2.00
Ohio.....	1.08	3.00	3.50	2.00	2.25	1.75	2.00	2.25	1.75
		3.25	3.50	2.35	2.60	2.10	2.35	2.60	2.10
		3.50	.....					
Oklahoma.....	2.01	.....	.....	3.05	3.30	2.80	3.70	4.60	2.40
							4.25	5.10	3.00
Pennsylvania.....	1.06	3.00	3.50	2.00	2.25	1.75	2.60	2.60	2.60
							2.00	2.25	1.75
Tennessee.....	1.13	3.50	.....	2.30	2.55	2.05	2.65	2.90	2.40
				2.40	2.65	2.15			
Texas.....	1.65	.....	.....	2.65	2.90	2.40	3.60	4.40	2.25
							4.25	5.05	2.25
Utah.....	1.58	.....	.....	2.60	2.85	2.35	2.65	3.30	1.50
Virginia.....	.98	3.50	3.00	2.00	2.25	1.75	2.65	2.90	2.40
							2.40	2.65	2.15
Washington.....	2.17	.....	.....	3.25	3.50	3.00	6.00	5.25	2.50
							3.95	3.75	1.25
West Virginia.....	.97	3.00	3.50	2.00	2.25	1.75	2.40	2.65	2.15
				2.15	2.40	1.90	2.00	2.25	1.75
Wyoming.....	1.46	.....	.....	2.50	2.75	2.25	2.15	2.00	.....

The prices fixed by the United States Fuel Administrator in most cases show an increase over the President's prices, but it should be noted that the former take into consideration subsequent wage increases and increased costs in general. A comparison of columns 2, 3, and 4 with column 1 in Table III illustrates the marked rise in the price of coal during the war. While the "Peabody-Lane" price showed little variation, being in most cases \$3.00 for mine run and \$3.50 for prepared sizes, the President's prices show considerable variations, ranging from \$1.65 to \$3.50. The prices fixed by the United States Fuel Administrator show a still greater spread, due to the fact that they are based primarily on the cost of production in the different coal fields of the country.

TABLE IV

Year	Tons	Price per Ton	Total Cost
1915.....	122,000,000	\$1.13	\$137,860,000
1916.....	136,000,000	1.32	179,520,000
1917.....	154,000,000	2.12	329,000,000
1918.....	166,000,000	2.95	489,700,000

Regular monthly cost reports were required from coal operators by the Federal Trade Commission in accordance with prescribed instructions. These cost forms include the following main items: labor, supplies, debits and credits to cost, fixed charges and general expenses, selling cost, income statement, deduction from income, charges to fixed assets. Each of these main items is subdivided. Under fixed charges and general expense, for instance, come the following subdivisions: royalty, depletion, depreciation (structure, equipment, development), deferred charges, taxes, general insurance, disability or workmen's compensation insurance, officers' salaries and expenses, clerical salaries and office expenses, legal expenses, miscellaneous. Additional items provided for include the following: tonnage, sales, coal inventories, and general information, such as number of days worked, cause of idle days, average number of men employed per day worked, location of mine, coal field, kind of coal, number or name of seam, and average thickness of seam.

On December 6, 1917, the United States Fuel Administration issued rules of procedure for producers requesting a revision of mine prices or a change of territorial classification. These rules require applicants to make a detailed report to the Federal Trade Commission on specially prepared uniform cost sheets for the entire year 1916 and separately for each subsequent month up to the time of making application, with an attached statement giving the petitioner's reason for belief that a revision of price is justified. The Federal Trade Commission is to report to the Fuel Administration on its findings.

ANTHRACITE PRICES

The matter of fixing maximum mine prices for anthracite has proved to be comparatively simple. Comprehensive official data on the cost of production were available, and the number of anthracite mines is not large, while conditions at the different mines do not vary nearly as much as in the bituminous coal fields.

In its interim report to the Senate of the United States on anthracite prices, the Federal Trade Commission on May 4, 1917, states that the May price at the mine of ordinary white ash anthracite, allowing for the 40 cents discount, was approximately as follows:

	Gross Ton	Net Ton
Egg.....	\$4.05	\$3.61
Stove.....	4.30	3.84
Chestnut.....	4.40	3.93

The following table shows the maximum mine prices fixed by the President on August 23, 1917, for Pennsylvania anthracite coal.

	White Ash	Red Ash	Lykens Valley
Broken.....	\$4.55	\$4.75	\$5.00
Egg.....	4.45	4.65	4.90
Stove.....	4.70	4.90	5.30
Chestnut.....	4.80	4.90	5.30
Pea.....	4.00	.....	.....

The United States Fuel Administrator on October 1, 1917, fixed the maximum price of pea coal at \$3.40, \$3.50, and \$3.75, for the different qualities, respectively.

To the foregoing prices 35 cents is to be added for wage increase. The prices in the foregoing table are for coal from railroad companies' mines. The so-called independent-operators' mines are allowed to charge 75 cents per gross ton more. Special prices were fixed January 1, 1918, for Bernice and Spadra anthracite coal from Arkansas.

RESULTS OF PRICE FIXING

Regarding the general effect of government price fixing of maximum mine prices for coal, it must be said that coal prices have been stabilized successfully by the policy established by the Lever Act. The voluntary maximum prices agreed upon at the Washington meeting of June 28, 1917, proved a failure. Not only were the prices agreed upon considered too high by the general public, but failure on the part of many operators to abide by the agreement made the latter illusory, in the absence of an agency to enforce the agreement. The method of fixing mine prices followed by the Fuel Administration is elastic enough to permit revisions to be made whenever necessary, and a number of changes have been made thus far, including upward as well as downward revisions.

The problem of fixing maximum prices for coal, that are fair and reasonable to operators as well as to consumers, is much more difficult in the United States than in other coal-producing countries, on account of the large number of mines involved, the different kinds of coal, the varying conditions of mining among the different coal fields and even within the same coal field, such as thick and thin veins, high and low cost mines, etc. In view of these conditions the fixing of a uniform maximum price for all the mines in a certain coal field or in a whole state is likely to result in giving a slight advantage to some mines, while others are made to suffer. However this may be, it must be acknowledged that the price-fixing policy pursued by the United States Fuel Administration has been successful in accomplishing two results of fundamental importance in the war-time economy of our nation, viz., stability of prices and stimulation of coal production.

THE POSITION OF THE JOBBER

The question of the need of the coal jobber has been freely discussed during the past two years. Strong sentiment was aroused

throughout the country by the speculative transactions of many jobbers during the coal panic in the winter of 1916-17,¹ and the necessity of curbing the jobbers' profits was recognized generally. At the Washington meeting, June 28, 1917, under the auspices of the Committee on Coal Production of the Council of National Defense, a maximum jobbers' commission of 25 cents per net ton was agreed upon. On August 23, 1917, President Wilson fixed the jobbers' margin at 15 cents per net ton for bituminous coal, at 20 cents per gross ton for anthracite coal east of Buffalo, and at 30 cents per gross ton west of Buffalo. Under this order the jobber was also allowed 5 cents per gross ton in case he incurred the expense of rescreening coal at Atlantic or lake ports for transshipment by water.

In order to check up jobbers' transactions the Federal Trade Commission, in co-operation with the United States Fuel Administration, required jobbers to make bi-weekly reports on all their sales. According to a report issued by the United States Fuel Administration on March 10, 1918, refunds aggregating \$34,000 and covering forty-two cases of overcharges on coal sales had been made as a result of investigations of sales reports. Under an order by President Wilson of March 18, 1918, coal jobbers were required to secure a license on or before April 1, 1918, from the United States Fuel Administrator.

Certain abuses under the President's order of August 23, 1917, fixing jobbers' margins, principally the fact that certain producing concerns also operated as jobbers and charged a double profit, resulted in a change in the regulation of jobbers' commissions. Under the new rulings of the United States Fuel Administrator effective April 1, 1918, the jobber may buy coal, if he can, from the producer at less than the maximum government mine price, and resell the coal up to the maximum mine price, or he may serve as a purchasing agent for retail dealers or ultimate consumers and make a charge for his services not to exceed 15 cents a ton on bituminous, 20 cents on anthracite coal east of Buffalo, and 30 cents west of Buffalo. He may not charge both commission and profit in buying. If the jobber chooses to purchase and resell for his own account, he

¹ See *Report of the Federal Trade Commission on Anthracite and Bituminous Coal*, 1917, p. 58.

must procure a license; if he operates merely as a purchasing agent, he need not take out a license.

RETAIL PRICES

When retail coal prices began to rise in the fall of 1916, the Federal Trade Commission investigated the gross margins of retail dealers in different parts of the country, and issued bulletins at frequent intervals on the retail coal price situation in different cities. This method of keeping the public informed as to actual conditions in various retail coal markets exercised a restraining influence on dealers and was instrumental in focusing public attention upon abnormal conditions. Subsequently, when maximum mine prices had been fixed, it also became necessary to regulate retail coal dealers profits. On October 1, 1917, the United States Fuel Administrator issued an order to this effect: It provides that the retail gross margin added by any retail dealer to the average cost of coal shall not exceed the average retail gross margin of such dealer for the calendar year of 1915 plus 30 per cent; the state fuel administrators were charged with investigating the cost of coal distribution and the profits of retail dealers to make the latter conform with this order. Under this ruling the retail coal prices of different dealers vary greatly on account of the variations in costs. For instance, in Chicago the gross margins established for sidewalk delivery on household coal is from \$1.95 to \$2.20 per ton; on industrial coal, from \$1.70 to \$2.05. Since January 7, 1918, dealers have been permitted to add 50 cents per ton on account of increased cost of cartage, etc.¹ In St. Louis the gross margin has been fixed at \$2.50 to \$2.75 on Arkansas and Oklahoma semi-anthracite, smokeless, and anthracite, and at \$1.50 on steam coal. At Madison, Wisconsin, the retail gross margin has been established at \$2.10 for household coal and \$1.60 for industrial coal. In Pittsburgh, Pennsylvania, the retail gross margin for coal has been fixed at \$1.17½ per ton.² Retail coal prices the country over will be affected by a recent order of the Interstate Commerce Commission, effective June 25, 1918, which provides for an increase in the freight rates for coal amounting to from 15 cents to 50 cents per ton.

¹ *The Coal Dealer*, March, 1918.

² *Coal Trade Journal*, May 1, 1918, p. 577.

One of the most important actions taken by the United States Fuel Administration, in so far as coal prices are concerned, is the regulation of contracts, established by an order of December 24, 1917. Formerly the bulk of the coal sold by operators, wholesalers, and jobbers was sold on contract. The new order provides that no contract shall provide for the delivery of coal over a period longer than one year, that the contract price shall not exceed the fixed maximum prices, and that every contract shall be subject to cancellation by the United States Fuel Administrator.

LABOR CONDITIONS

The labor situation in the coal-mining industry of the United States has undergone some significant changes during the past three years as compared with pre-war conditions. In 1915 and 1916 the high scale of wages paid by manufacturers of war material, averaging about 20 per cent in excess of miners' wages, caused a steady migration from the coal fields to other industrial centers. The draft made additional inroads into the labor supply at the mines. According to John L. Lewis, until recently statistician of the United Mine Workers of America, out of a total membership of 450,000 mine workers, 19,135 members of the U.M.W.A. enlisted and 60,604 are subject to the draft. The reduction in the number of anthracite mine workers has also been considerable. While the number of mine workers in the anthracite coal fields of Pennsylvania before the war amounted to 177,000, in 1914 the number increased to 180,899, and in 1918 was reduced to 153,534. At the same time immigration from foreign countries, which formerly furnished a constant supply of mine labor, has come almost to a standstill.

The prosperous financial condition of the coal market and the scarcity of labor in the coal fields has greatly benefited the wage situation of mine workers. Several wage-scale increases went into effect during 1916 and 1917, and wages have been higher than at any previous time. The new wage agreement of April 1, 1916, for the Central Competitive District, comprising Pennsylvania, Ohio, Indiana, and Illinois, provides for a mine-run basis in paying wages, for which the miners' unions have been striving for many years.

Under this agreement the miners received a general increase of 3 cents a ton in the pick-mining rate, a corresponding advance in the machine rate, and 5 per cent increase for other classes of labor. Anthracite miners on May 1, 1916, made an agreement with the operators providing for an eight-hour day and a 3 per cent increase in wages. In 1917 two wage increases went into effect, one in April, approximating 20 per cent for bituminous-coal miners and from 10 to 35 per cent for anthracite miners, the other in October, for bituminous miners, amounting to 45 cents per ton. The 45-cent wage-increase agreement of October 27 was made subject to the condition that it shall not apply in any district in which operators and miners fail to agree upon a penalty provision preventing strikes and violations of agreements. The United States Fuel Administrator, in recommending to the President the 45-cent advance stated that these wage increases mean an advance over the wages of April 1, 1914, of 50 per cent to miners and 78 per cent to the best-paid laborers. It is further explained in this communication to the President that the United States Fuel Administrator in reaching the conclusion that coal prices should be increased was influenced partly by the provisions of the agreement intended to secure an increased and uninterrupted production of coal. Under the provisions of the draft law, the communication continues, miners are not excluded as a class. Considerable inroads have been made, as a result of the first draft, upon mine labor. Moreover, the conditions surrounding the industry in ordinary times account for the fact that the average number of days work in the year has been from 200 to 230 only. They also, in part, account for the fact that the average hours of labor per day have fallen considerably below the eight hours stipulated in wage agreements. According to John L. Lewis, the U.M.W.A. since the beginning of 1912 have secured wage advances amounting to from 30 to 104 per cent, varying according to the kind of labor performed.¹

In connection with these increases in wages at the coal mines it must be taken into consideration that employment at many coal mines throughout the country was very unsteady. The number of working days varied greatly on account of frequent shutdowns due to lack of car supply, so that while wages were high the number of

¹ *Coal Age*, 1918, p. 204.

working days lost materially cut down the total monthly earnings of the mine workers.

Another factor deserving attention is the high fatality record in coal mines brought about by war-time conditions. The abnormal circumstances under which the coal mines have been operated, high-speed production in spite of labor shortage, and frequently with inexperienced help, as well as less attention to safety regulations than under normal conditions, are responsible for an increase of 21 per cent in the coal-mine fatalities during 1917 as compared with 1916. The greatest increase in fatalities was caused by falls of roof or face, while mine cars and locomotives account for the next highest increase, followed by gas and dust explosions.¹

Labor unrest and strikes have been frequent. In most cases, however, an agreement was effected without long-drawn-out strikes, although in many instances strikes considerably reduced the normal output of mines. Data compiled by the United States Geological Survey show that in 1916 coal miners' strikes involved 91,152 men in the bituminous and 79,481 men in the anthracite coal fields. The total number of days lost in that year on account of strikes amounted to 2,389,519 in the bituminous and 955,067 in the anthracite coal fields, while the average number of days lost per man was 26 for bituminous and 12 for anthracite miners. Data compiled for the year 1917 from coal trade journals indicate that there were 66 coal miners' strikes in 12 states, involving 251,595 mine workers.

The benefit of workmen's compensation insurance laws in coal-mining states is illustrated by the operation of the Pennsylvania laws in 1916. There were 792 fatalities in the anthracite and bituminous coal fields in that year. The amount of compensation paid for fatality cases in the anthracite field amounted to \$1,260,804 and for disability cases \$410,845. In the bituminous coal fields of that state 301 workers were killed and 10,710 injured or disabled. The compensation paid for fatality cases amounted to \$771,748, for disability \$516,493, while the total number of dependents of miners killed and injured was 10,179.²

Organized labor in the coal fields of the United States has grown in number and influence during recent years. According to

¹ *Coal Mine Fatalities in the United States, 1917*, U. S. Bureau of Mines.

² *Coal Age*, 1918, p. 409.

statistics published in connection with the recent meeting of the U.M.W.A. at Indianapolis¹ the membership of the U.M.W.A. in October, 1917, amounted to 415,305, or 57.60 per cent of the total number of men employed in the coal industry of the country. From 1910 to 1917 the membership of the U.M.W.A. has increased 75.93 per cent. There are twenty-eight union districts in the various coal-mining states, of which the Illinois district, No. 12, is the largest, with a membership of 87,189, the next largest being the Central Pennsylvania district, No. 2, with 45,082 members.

THE COMBINATION MOVEMENT

The conditions incident to government regulation of the coal industry have given a powerful stimulus to the organization movement in the coal trade of this country. The coal industry was one of the few important industries of the United States which prior to the war had no trade organization covering the whole country. Local coal operators' associations have existed for several years past in a number of coal fields. There were a few local wholesalers' and jobbers' associations and a large number of well-organized local and state associations of retail coal dealers. In 1917 national associations were formed in each of these three divisions of the coal trade, while the number of local associations increased at the same time. The National Retail Coal Merchants' Association, with headquarters at Washington, and the National Coal Jobbers' Association were both organized in 1917 and combine most of the local retail and jobbers' associations. The National Coal Operators' Association was organized on October 23, 1917, with headquarters at Washington. The members handle about 350,000,000 tons of bituminous coal per year.²

THE COAL EXPORT SITUATION

The coal export trade of the United States since the outbreak of the present war in 1914 offers some very interesting changes. The most significant development during that period is a shifting of the control of the world's coal markets. The withdrawal of a large percentage of the normal British coal tonnage from oversea markets opened up promising new trade channels for American coal, espe-

¹ *Coal Age*, February 2, 1918.

² *Proceedings of the First Annual Convention of the National Coal Association*, May, 1918, p. 7.

cially for the high-grade products of the New River and Pocahontas coal fields situated so favorably with regard to our oversea shipping ports. American coal exporters recognized the opportunities confronting them, particularly with respect to South American markets, with the result that our bituminous coal exports to South America increased from 441,368 tons in 1913 to 1,840,128 tons in 1916. The rapid expansion of our coal trade however came to a sudden stop in 1917. The enormous demand for coal and the lucrative profits in the home markets caused interest in the export trade to lapse. Subsequently the scarcity of ships, high freight and insurance rates, and an increasing number of war restrictions were instrumental in reducing coal exports still more. While the total exports of coal from the United States amounted to 24,079,209 gross tons in 1916 and to 27,929,141 gross tons in 1917, an increase of 3,849,930 gross tons, or 16 per cent, this increase is attributable solely to increased exports to Canada. In 1916, 16,597,390 gross tons of coal were shipped to Canada from the United States and in 1917 the coal shipments amounted to 22,442,520 gross tons, an increase of 5,845,130 gross tons.

If we exclude the coal exports to Canada the remaining exports of coal from the United States to foreign countries show a decrease of 1,995,198 gross tons, or 26.7 per cent, for the year 1917 as compared with 1916. The countries to which coal exports from the United States increased more than 10,000 tons during 1917 are Chile, with an increase of 138,998 tons; Cuba, 51,155 tons; Danish West Indies, 13,430 tons; England, 44,411 tons; Jamaica, 13,500 tons; Mexico, 35,646 tons; Panama, 195,705 tons; Portuguese Africa, 12,556 tons; and Spain, with an increase of 20,571. The following decreased coal exports are significant: to Argentina, 599,370 tons; Brazil, 98,009; Egypt, 90,722; Greece, 45,998; Italy, 1,204,599; Norway, 55,096; Sweden, 70,986; Uruguay, 92,767.

Coal for bunkering and for export is now controlled by the United States Fuel Administration. An order of December 13, 1917, provides that coal for bunkering and for export, except for Canada and Mexico, shall be sold at the maximum mine prices plus \$1.35 per short ton. An order of April 1, 1918, prohibits the shipment of coal to any port for bunker purposes without permission of the United States Fuel Administrator.

While it remains problematical, of course, what the developments of the American coal export trade will be in the post-bellum period, certain outstanding facts can be recognized even now, which may have an important bearing on the future export situation. A survey of all the coal-consuming countries of the world shows a world-wide dearth of coal which promises to continue throughout the industrial reconstruction period after the war. Great Britain and Germany, the two countries which produce the greatest tonnage of coal next to the United States, will, according to well-informed authorities, need most if not all of their coal at home, and will not be able to export any large tonnages to foreign markets for several years to come.

The United States with its enormous coal resources, greatly increased output, and many hundreds of new mines will be the logical source of supply for the bulk of the demand from oversea markets formerly supplied by Great Britain and Germany. A second and very important factor to be taken into account will be the new American merchant marine now under construction. Prior to the war control of the coal export market was determined chiefly by the abundance and cheapness of transportation and the ready availability of transportation to the coal fields. This gave Great Britain the leading position in the coal markets of the world. As conditions are shaping themselves at the present time it looks as though the United States, as the leading maritime power, would become the main dependent of the world for coal in the future. Whether this is altogether desirable from an economic point of view is another question. It may be more desirable for the United States to sell coal in combination with the other raw materials as a finished product rather than as a raw material. In the interest of our infant by-product industry it may, in fact, be highly desirable to export coke rather than coal and to extract the by-products from our coal before we export it in the form of coke.

The question of labor supply will constitute a further important factor in deciding the future position of the United States in the oversea coal markets, and here again conditions seem to favor this country. Our newly established banking and credit facilities in foreign countries; the strategic location of the Panama Canal and its excellent bunkering facilities; the large modern tide-water

loading piers at Lambert's Point, Sewall's Point, and Newport News; the fact that during the past two years most of the labor-saving devices placed in American coal mines were installed in the mines whose production is best available for export trade; and last but not least such recent constructive federal legislation as the Webb law for promoting co-operation in foreign trade and the helpful work of the United States Tariff Commission—all these factors combined promise a most auspicious future for the American export coal trade.

SUMMARY

In the foregoing survey of the coal situation in the United States during the past three and one-half years of the present war three separate periods can be clearly distinguished. The first period, characterized by a widespread financial depression, extended up to the summer of 1916. Overproduction and unsound business conditions, resulting chiefly from unlimited competition, led to efforts being initiated by the federal government to improve the unhealthy situation obtaining in the coal industry. This was the case particularly in the bituminous coal industry. In the fall and winter of 1916-17 the situation changed completely. A rapidly increasing demand for coal, local coal shortages, and panic prices led to numerous investigations by municipal, state, and federal authorities for the purpose of protecting the public against exorbitant prices and to procure adequate supplies of coal. In a considerable number of cities throughout the country municipal coal yards were established, primarily for the purpose of providing fuel at reasonable prices for the needy.¹ Efforts to stabilize coal prices by voluntary agreement having failed, Congress enacted the Lever law, which provides for government regulation of the coal industry and trade. The enactment of this law marked the advent of the third period, in which the coal industry of the country was placed under the control of the United States Fuel Administration. Five outstanding features characterize this period up to the present time: (1) government price fixing, (2) increased production, (3) difficulties of transportation, (4) regulation of distribution, and (5) systematic conservation.

¹ *Municipal Coal Yards*, Municipal Reference Bureau, University of Wisconsin.

The need of stabilizing coal prices was the first important economic problem which developed out of war conditions as far as the coal situation was concerned and for which a solution had to be found. By fixing maximum mine prices as well as jobbers' and retailers' margins which allowed a fair profit, this phase of the coal situation was successfully taken care of.

Closely linked up with the question of prices is the problem of production. The high prices prevailing in the coal market prior to government regulation and the liberal policy followed by the United States Fuel Administration in establishing maximum mine prices had the effect of stimulating the production of coal and made it unnecessary for the government to adopt extraordinary measures for increasing production. Unquestionably the large and steady increase in the coal production of the United States constitutes the most significant as well as the most encouraging feature in the war-time coal situation of the whole world. The output of American coal mines might have been still greater if difficulties of transportation and car shortage had not interfered.

Inadequate transportation facilities has formed the most disturbing element in the whole coal situation thus far. Under Federal control of the railways this serious drawback may be remedied in the future. The large increase of rolling stock provided for by the United States Railway Administration promises relief in due course of time. But until an adequate car supply at the mines and speedy movement of coal shipments from the mines to market shall be realized the coal situation will continue to remain an ever-menacing danger to our national welfare.

In view of these conditions the problem of regulating distribution and of conserving and husbanding our available coal supplies has become of vital importance. By means of the zoning system, recently established, the United States Fuel Administration proposes to bring about a more efficient distribution of coal shipments. Already the fuel supply allowed certain industries has been curtailed under agreement with the United States Fuel Administration and further measures to conserve the available supply of coal, fuel oil, gas, and electricity may become necessary.

WILLIAM NOTZ

WASHINGTON, D.C.